

HURRICANE KATRINA

DEBRIS MANAGEMENT PLAN

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

SEPTEMBER 28, 2005

Debris Management Plan Purpose

On August 28, 2005, Governor Kathleen Babineaux Blanco declared a state of emergency for the state of Louisiana as Hurricane Katrina approached Louisiana. On August 29, 2005, Hurricane Katrina struck Louisiana causing widespread damage, flooding and destruction. The Department of Environmental Quality has subsequently issued a number of declarations, administrative orders and waivers for local governments handling Katrina debris. On August 30, 2005 the Secretary of the Louisiana Department of Environmental Quality (LDEQ) issued a Declaration of Emergency and Administrative Order. This Declaration and Order was subsequently amended by the Secretary on September 3, 2005. Both documents are included as Attachments 1 and 2.

The purpose of this guidance is to furnish local governments with basic information on hurricane debris management within the scope of effective environmental management. While LDEQ is willing to be flexible and innovative on various approaches to handling debris issues as a result of Hurricane Katrina, it must still adhere to its mission of protecting the state's environment to the fullest extent possible under the circumstances. The Department will consider reasonable waiver requests in order to effect rapid and environmentally safe disposal, composting and waste diversion goals.

Requests for waivers and approvals for debris management sites should be routed to Dr. Chuck Carr Brown at (225) 219-3180 or Lou Buatt at (225) 219-3980.

This guide is an ongoing project. Revisions will be posted on the Department's web site.

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Debris Management Site Selection General Guidelines

Types of Debris Management Sites

In general, local governments will need to determine appropriate sites for the following temporary activities: staging and transfer of construction and demolition (C&D) debris; staging of vehicles and boats; staging of household hazardous waste; chipping, grinding and/or burning of vegetative debris; and staging of white goods, electronics and other consumer items. Use of a site as a permanent disposal site may also be considered.

Finding the Right Location

When selecting a debris management site, the local government will need to keep the following in mind:

1. What is the proposed use for this site?
2. Is it easily accessible?
3. Is it removed from obstructions such as power lines and pipelines?
4. Is the site considered to be a wetland area, as defined by the U.S. Army Corps of Engineers?
5. Is the general site topography conducive to the activity that will be conducted there?
6. Are there nearby residences and/or businesses that will be inconvenienced or adversely affected by use of this site?
7. Is the size sufficient for its intended use?
8. Is the soil type suitable for its intended use?
9. Can a site that has been used in the past be reactivated for this use?

In addition to the criteria listed above, LDEQ will evaluate proposed burn sites based on their location near water bodies such as

rivers, lakes or streams and their proximity to occupied dwellings.

Site Approval

Upon request by the local government, LDEQ or its agent will inspect the proposed site to determine the appropriateness of its use as a debris management site. If the site is approved, LDEQ will inform the local government and will document the approval, usually by letter. The letter will contain any restrictions and operational conditions that must be adhered to. Examples of these restrictions are hours of operation and types of wastes to be allowed. Operational conditions will be outlined in an Interim Operational Plan. For examples of these documents, see Attachments 3-6.

Site Closure

Each debris management site will eventually be emptied of all material and be restored to its previous condition and use.¹ Closure must be in accordance with approved department practices and/or the interim operational plan.

Sampling of soil and/or ash that is left at the site might be required by the department. If required, the contractor will take necessary steps to ensure no environmental contamination is left on-site. Monitoring and/or remediation of a site must be coordinated through the department's Office of Environmental Assessment.

Closure should be accomplished within the time limits established by the department.

¹ If the site is used for C&D disposal and on-site closure is approved, specific tasks such as deed recordation must be accomplished.

Construction and Demolition (C&D) Debris

C&D debris may be handled in accordance with the provisions of the Department's Declaration of Emergency and Administrative Order, as amended. LDEQ expects, to the greatest extent possible, for C&D debris to either be staged at temporary sites and transported to permitted Type III facilities or to be placed into emergency disposal sites. Materials approved for receipt at these sites include roof shingles, roofing materials, carpet, insulation, wallboard, treated and painted lumber, etc.

LDEQ recognizes that decisions on the disposition of wastes and debris need to be made at the collection point. Use of best professional judgment will be necessary to determine the ultimate disposition of collected material. Contractors chosen by the local governing authority or by state or federal agencies should possess knowledge of applicable regulations and of the Declaration of Emergency and Administrative Order in order to correctly route waste streams to appropriate sites and/or facilities.

Site operations will comply with the Interim Operational Plan provided by LDEQ. It is the responsibility of the local government to provide this document to any entity that may be charged with operation of the site.

Staging/Transfer sites

Arrangements should be made to screen out, to the greatest extent practicable, unsuitable materials such as household garbage, white goods, asbestos containing materials (ACM's), and household

hazardous waste. These materials should be placed in containers and transported to facilities that are approved for their receipt.

On-Site Disposal Sites

During extreme emergencies, it is necessary to allow accumulation and disposal of C&D debris at sites that are deemed appropriate but have not had time to go through the regular permitting process. LDEQ will evaluate requests by local governments and, if it is determined that a need exists, will allow disposal in this manner. If approved, operations must comply with the Interim Operational Plan provided by LDEQ.

Burning of C&D Debris

As dictated by circumstances, occasions may arise where LDEQ will allow C&D debris to be burned. While not an ordinary occurrence, it is a possibility.

LDEQ will endeavor to ensure that the location chosen for this activity is thoroughly evaluated to make any impacts as minimal as possible. Local, state and federal partners will be advised of locations that have been approved for this purpose.

Ash generated as a result of burning of C&D debris must be analyzed to determine if contaminants are present that would render the material unsuitable for use as a soil amendment, or would render the material a hazardous waste. Disposal or use of this ash must occur ONLY AFTER review of analysis results by LDEQ.

Vegetative Debris

Materials approved for receipt at these sites include vegetative storm debris such as yard waste, trees, limbs, stumps, branches and untreated or unpainted wood. Sites should be identified as chipping/grinding sites and/or burn sites. All sites must be operated in accordance with the LDEQ-provided Interim Operational Plan or other department correspondence. It is the responsibility of local government to provide this document to any entity that may be charged with operation of the site. All equipment (grinders, chippers, air curtain pit burners) shall be operated in accordance with manufacturers' instructions and any applicable LDEQ permit. For an example of instructions provided for these sites, see Attachments 3-6.

Chipping/Grinding Sites

Chipping and grinding provide material for use in landscape mulch, compost preparation, and industrial boiler fuel. If preparing compost and/or mulch piles, care should be taken to reduce the potential for spontaneous combustion.

When ground organic debris is put into piles, microorganisms can very quickly begin to decompose the organic materials. The microorganisms generate heat and volatile gases as a result of the decomposition process. Temperatures in these piles can easily rise to more than 160 degrees Fahrenheit. Spontaneous combustion can occur in these situations. Spontaneous combustion is more likely to occur in larger piles of debris because of a greater possibility of volatile gases building up in the piles and being ignited by the high temperatures. If wind rows can be

maintained 5 feet to 6 feet high and 8 feet to 10 feet wide, volatile gases have a better chance of escaping the piles; and the possibility of spontaneous combustion will be reduced.

Turning piles when temperatures reach 160 degrees can also reduce the potential for spontaneous combustion. Pile turning provides an opportunity for gases to escape and for the contents of the pile to cool. Adding moisture during turning will increase cooling. Controlling the amount of nitrogen-bearing (green) wastes in piles will also help to reduce the risk of fire. The less nitrogen in the piles the slower the decomposition process and consequently the less heat generated and gases released.

Large piles should be kept away from wooded areas and structures and should be accessible to fire fighting equipment, if a fire were to occur. Efforts should be made to avoid driving or operating heavy equipment on large piles because the compaction will increase the amount of heat build-up, which could increase the possibility of spontaneous combustion.

Burn Sites

Proximity to roads and dwellings is of particular importance in the selection of sites for this activity.

Open Burning. LDEQ may approve open burning of vegetative debris on a case by case basis. As with all proposed debris management sites, open burning locations must be approved by LDEQ in advance of their use.

Air Curtain Pit Burners (Air Curtains or Pit Burners). Air Curtains should be operated in accordance with manufacturers' instructions and with any applicable LDEQ permits or directives. For examples of Air Curtains, see page 6.

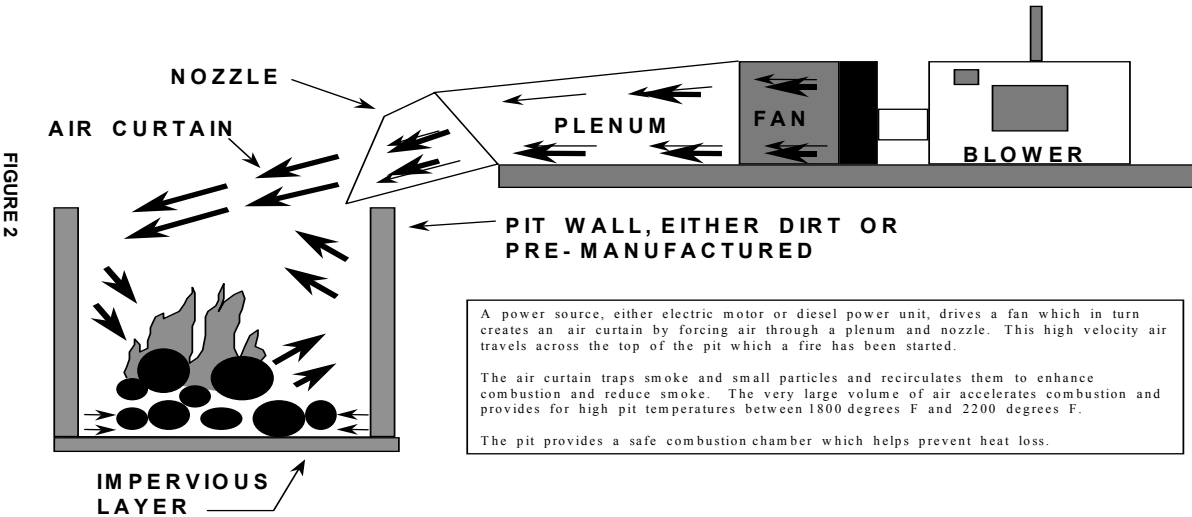
Disposal of Ash from Vegetative Debris Burn Sites. Ash may be land applied on site or off site. Whenever possible, soil test data and analysis of the ash should be available to determine appropriate application rates. Ash should not be applied during periods of high winds. Ash should not be applied within 25 feet of surface

waters or ditches or drains on vegetated sites. These distances should be doubled on sites that are not vegetated, and the ash should be promptly incorporated into the soil.

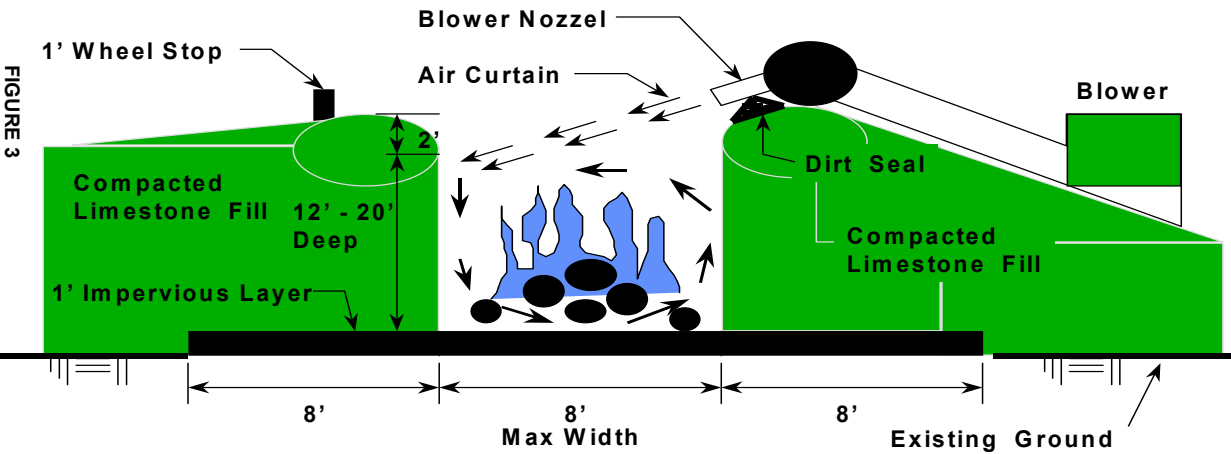
As an alternative to land application, ash may be managed at a permitted solid waste landfill.

Assistance in obtaining soil test data and waste analysis of ash should be available through parish offices of the Extension Service.

Overview of an Air Curtain Operation



Air Curtain Pit Burner



Abandoned Vehicles

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| <ol style="list-style-type: none">1. Local governments shall designate an aggregation point for the temporary storage of abandoned vehicles. Contact DEQ for site approval.2. Storage areas should be secure, fenced and lighted.3. Vehicles brought to the storage areas should be site tagged, inventoried in by license plate, make, model, color and VIN.4. Vehicles shall be staged and site tagged for easy retrieval.5. Site operators shall forward vehicle data to the Department of Insurance for dissemination to insurers.6. Local governments shall be responsible for the proper notification of vehicle owners.7. Louisiana State Police will be sending Inspectors. Vehicles shall | <p>remain at the staging areas until inspected by the State Police and the National Insurance Crime Bureau.</p> <ol style="list-style-type: none">8. Local government may request that direct federal assistance handle the disposition of unclaimed abandoned vehicles as required by state and local laws.9. Scrap vehicles should be dismantled and properly recycled. The following materials must be recovered: gasoline and diesel fuel, refrigerants, lubricating oils, mercury ABS switches, mercury convenience switches, lead acid batteries, brake and transmission fluid, antifreeze and tires. Propane tanks and large appliances in recreational vehicles should be removed.10. Vehicles may need to be decontaminated before leaving the aggregation site. |
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Abandoned Boats

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| <ol style="list-style-type: none">1. Local governments shall designate an aggregation point for the temporary storage of abandoned boats. Contact DEQ for site approval.2. Storage areas should be secure, fenced and lighted.3. Boats brought to the storage areas should be site tagged, inventoried in by Department of Wildlife and Fisheries registration, make, model, color and serial number.4. Boats shall be staged and site tagged for easy retrieval.5. Site operators shall compare boat data with FEMA database registered boats.6. Site operators shall forward boat data to the Department of Insurance for dissemination to insurers.7. Local governments shall be responsible for the proper notification of boat owners. | <ol style="list-style-type: none">8. Louisiana State Police will be sending Inspectors. Boats shall remain at the staging areas until inspected by the State Police and the National Insurance Crime Bureau.9. Local government may request that FEMA handle the disposition of unclaimed abandoned boats as required by state and local laws.10. Boats deemed for scrap should be crushed to reduce volume for easier handling and management, shredded and properly recycled when possible. The following materials must be recovered: gasoline and diesel fuel, refrigerants, lubricating oils, mercury bilge switches, propane tanks, large appliances, lead acid batteries, transmission fluid and electronics, such as, radar sets, radios, GPS units, and depth finders. |
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Large Appliances

1. Local governments should request or set up drop off collection sites for citizens for large appliances (white goods).
2. Local governments should require contractors demolishing condemned structures, to the greatest extent practicable, to remove and properly handle household appliances, televisions and computers, including refrigeration and freezing units at commercial locations.
3. Refrigerant containing appliances (RCAs) such as: refrigerators, freezers and air conditioning window units shall be handled in a manner which will prevent a release of refrigerants.
4. RCAs will be delivered to approved collection sites for refrigerant removal. EPA certified refrigeration technicians will remove refrigerants and handle in accordance with EPA standards.
5. Refrigerants shall be removed from condemned structures with split system air conditioning units prior to demolition. Only EPA certified refrigeration technicians will remove and handle refrigerants in accordance with EPA standards. Condensing units will then be removed from site and sent to appropriate collection site.
6. White goods (e.g., unsalvageable air conditioners, stoves, range tops, and refrigerators or freezers from which food has been removed) shall be stored in an area separate from other wastes and shall be stored in a manner that prevents vector and odor problems and shall be removed from the facility or staging area within ninety (90) days.
7. Putrescible waste (e.g. rotting food has been removed from unsalvageable refrigerators and freezers) shall be disposed in a permitted Type II landfill.

Household Hazardous Waste

1. Local governments should request or set up drop off collection sites for citizens.
2. Precautions must be taken at these sites to prevent the release of materials into the environment. Such precautions include providing lined temporary storage areas for accumulation of the material.
3. Local governments should require that contractors demolishing condemned housing units, to the greatest extent practicable, remove and properly handle household hazardous materials such as: paints and varnishes, solvent, acids, pesticides, cleaning fluids, pool chemicals, used motor oil, propane tanks, mercury thermostats, liquid mercury, mercury containing devices, and refrigerants.

Liquefied Petroleum Gas Tanks

1. Liquefied Petroleum Gas (LPG) tanks typically contain propane gas. Propane is a flammable gas that is sometimes generically referred to as LP-Gas, LPG, or Liquefied Petroleum Gas. LPG is typically a propane-butane mixture. Propane might also contain small amounts of other flammable gasses, such as, ethane, ethylene, propylene, isobutane, or butylenes. LPG tanks may be found in a number of urban and rural environments such as motor homes, travel trailers, grills, camp stoves, lanterns, etc. Liquefied petroleum gas is stored under pressure. The gas will leak from any joint or connection which is not sealed properly.
 - a. If the Liquefied petroleum gas leak is a gas leak it may not be seen (because LPG is colorless), except where the leak is of sufficient size to be seen shimmering in the air.
 - b. When a liquid Liquefied petroleum gas leak occurs, the gas release will be seen as a patch of ice around the area of the leak, or as a jet of white liquid. This white appearance is due to the cooling effect created by the rapid expansion of the LPG liquid into a gas. The condensing atmospheric moisture makes the leak visible.
2. Liquefied petroleum gas is heavier than air. Any significant leak will move down and stay on the ground. LPG will accumulate in any low-lying area such as depressions in the ground, drains or pits.
3. Since LPG is stored in two phases, liquid and gaseous, there is potential for either a liquid leak or a gas leak.
 - a. Portable, consumer type tanks will be sized from 4 to 40 pounds, though the most common tank is the 20 pound tank. Bulk tanks are often 100 to several hundred thousand pounds.
 - b. It is vital the all LPG tanks be located. Portable tanks can be re-located to a "staging area for recertification, refurbishment or dismantling.
 - c. Bulk tanks should not be moved except by properly train personnel.
 - d. Tanks measuring 25 gallons and larger, are suppose to be in the LPG Commission database. The data base should list where these tanks were supposed to be installed. Orphan tanks can be identified and the owners tracked down by their serial numbers.
4. Debris workers must be observant for LPG tanks. Basically, there are two types of tanks you will find. Portable and bulk.

Development comment: Liquefied Petroleum Gas Commission will coordinate this once we have them staged at a particular place. LA State Police Haz Mat Section is working to log found tanks locations and those that are still floating in the flood waters and locations of tanks after the waters recede. Once the tanks are able to be retrieved, they need to be taken to a staging area or areas and get serial numbers. Then they can then start the process of getting them properly placed with their owners Most of these tanks will be reusable and will not cause an additional problem of disposal.

Floodwater Sediment Handling Guidelines

1. Sediment samples collected by the Environmental Protection Agency (EPA) and Louisiana Department of Environmental Quality (LDEQ) in the New Orleans area have been analyzed for bacteria and chemicals. Preliminary results indicate that some sediments may be contaminated with bacteria and fuel oils. Human health risks may therefore exist from contact with sediment deposited from receding flood waters.
2. Health agencies and/or occupational health agencies may be consulted to determine appropriate exposure precautions to be taken. Workers collecting sediments from flooded areas should take necessary precautions to avoid skin contact with sediments or breathing sediment materials. Assume all sediments are contaminated.
3. Vehicles transporting sediments to aggregation points must be covered to prevent sediments from escaping.
4. Sediments need to be characterized to determine the appropriate disposal option. If warranted, some sediments may need to be disposed in a permitted hazardous waste landfill. Some slightly contaminated sediments may be disposed in a permitted industrial solid waste landfill. Uncontaminated sediments may be used as fill material.
5. Sediments arriving from sites where no sampling has taken place must be separately piled, sampled and tested before disposal. Untested sediments will be treated as hydrocarbon or heavy metal contaminated until proven otherwise.

Asbestos Debris

Licenses Required by the Louisiana State Licensing Board for Contractors (LSLBC)

Contractors performing asbestos abatement must be licensed by the Louisiana State Licensing Board for Contractors. Licensing for asbestos abatement is under the Commercial license with a specialty in Asbestos. Additional information for licensing can be found at <http://www.lslbc.louisiana.gov/index.asp> or by calling (225) 765-2301.

One of the licensing requirements is that one Supervisor/Contractor acting as the responsible individual for the company be accredited with LDEQ in order to get a license. The Licensing Board has expedited testing and Board approval. Time frame is approximately 2 weeks.

Following approval from the Louisiana State Licensing Board for Contractors, all abatement workers/supervisors performing work in Louisiana are required to be accredited by LDEQ. The Asbestos Accreditation Form (AAC-1) can be found at www.deq.louisiana.gov/permits/asbestos/aac-1.doc. Note that there is a fee for emergency processing (3 days or less).

Accreditations and Notifications Required by La. Dept. of Environmental Quality

The Louisiana Air Quality regulations, Chapters 27 and 5151 regarding Asbestos Demolition and Renovation abatement activities as well as accreditation of Workers, Supervisor/Contractors (including air monitoring personnel), Inspectors,

Management Planners, and Project Designers are located at <http://www.deq.louisiana.gov/planning/regs/title33/index.htm>.

All personnel working as Asbestos Workers, Supervisor/Contractors (including air monitoring personnel), Inspectors, Management Planners, or Project Designers must be accredited by Louisiana Department of Environmental Quality. Initial and subsequent AHERA training by an EPA recognized training provider or training provider recognized by a state program with EPA authorization is required for accreditation as well as a picture for an I.D. card and fees. An Asbestos Accreditation Application can be found at <http://www.deq.louisiana.gov/permits/asbestos/aac-1.doc>. Also, a list of Louisiana recognized training providers can be found at http://www.deq.louisiana.gov/permits/asbestos/asbestos_training.pdf

The LDEQ has expedited the accreditation process for the Hurricane affected areas, including Hurricane related abatement, and is able to give almost immediate accreditation by letter,

if necessary. Follow up certificates will be generated as soon as possible for all approved applicants. During the review process, if an applicant does not have the necessary credentials, additional paperwork will be requested. If the paperwork is not submitted, the accreditation for that person will be pulled. See Amended Declaration of Emergency and Administrative Order, number 6. **Asbestos Clean-up** on our website for abatement and training notification allowances with a 24-hour notification after commencement, and waiver of the Louisiana 2-hour regulations class at <http://www.deq.louisiana.gov/news/pdf/Declarationofemergency.pdf>.

The Asbestos Notification form for Demolition or Renovation can be found at <http://www.deq.louisiana.gov/permits/asbestos/aac-2.pdf>. Note: 10-day notification is waved for the affected Hurricane area; however, notification is required within 24 hours of abatement commencement.

If you have any asbestos questions, please contact Jodi Miller at LDEQ at (225) 219-3004.

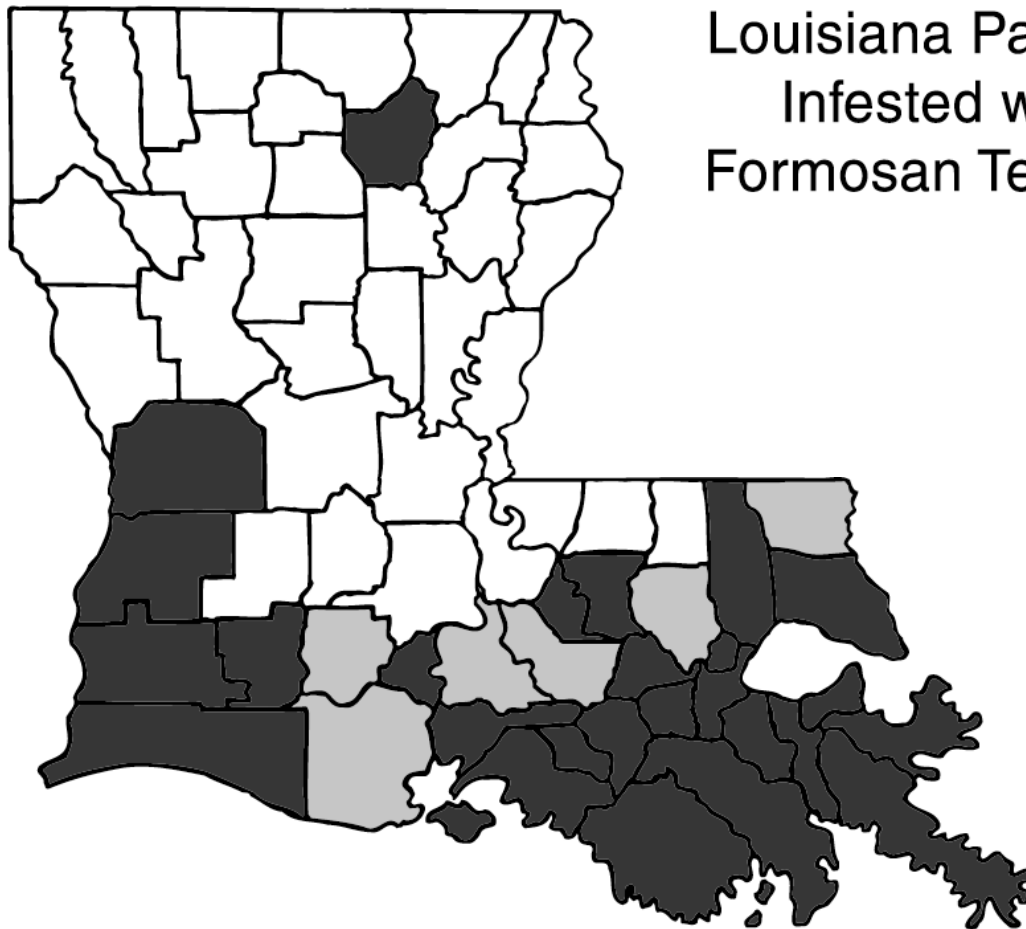
Formosan Termite Control

Formosan subterranean termites, *Coptotermes formosanus*, were introduced into the greater New Orleans area, as well as several other coastal cities, after World War II. By the time they were identified in 1966, they had become well established in areas throughout New Orleans and Lake Charles. The termites have had 30 years to grow and spread.

New Orleans has one of the largest and most destructive Formosan termite infestations. A humid, near-tropical climate contributes to the problem. The architectural character of the city's French Quarter or *Vieux Carre*, contributes to the problem. Many of the buildings there are historic landmarks with foundations supported by woodwork dating back to the 1700s in some cases. Row-style homes with their shared walls give foraging termite's easy access from one building to the next. This construction style hampers pest control efforts to treat or fumigate a single client's home or building.

Landfills are an ideal environment for these subterranean termites, especially in humid Louisiana. For this reason, restrictions are in place from the Louisiana Department of Agriculture and Forestry as to where in Louisiana potential Formosan termite contaminated debris might be disposed. Landfill operators, contractors and waste generators should consult with the Department of Agriculture and Forestry about proper disposal of Formosan termite debris. Contact Mr. Bobby Simoneaux at (225) 925-3763 or bobby_s@ldaf.state.la.us

Louisiana Parishes Infested with Formosan Termites



■ Parishes Infested

Ascension	Plaquemine
Assumption	St. Bernard
Beauregard	St. Charles
Calcasieu	St. James
Cameron	St. John
East Baton Rouge	St. Martin
Iberia	St. Mary
Jefferson	St. Tammany
Jefferson Davis	Tangipahoa
Lafayette	Terrebonne
Lafourche	Vernon
Ouachita	West
Orleans	

■ Expected Infestation in Near Future

Acadia
Iberville
Livingston
St. Martin
Vermilion
Washington